

Table S4: Proteins that co-purify with aaRSs.

	Protein name	MW	Annotation	Comments
GFP-MetRS	Alr2312	53097	Hypothetical protein Putative zinc-dependent peptidase	
	Alr1845 (TrmB)	24848	tRNA (guanine-N(7)-) methyltransferase	
	All1975	44600	Hypothetical protein	
	All0914	39188	Hypothetical protein, probable glycosyl transferase	
	All4337(TufA)	44680	Elongation Factor-Tu	
GFP-AspRS	Alr7308	32219	hypothetical protein putative HNH nuclease	
	Alr3067	36956	hypothetical protein	
	Alr2954	20810	hypothetical protein putative NUDIX hydrolase	
GFP- α GlyRS	Alr4111	79215	Glycyl-tRNA synthetase, beta subunit	In <i>Anabaena</i> GlyRS is a heterodimer composed of subunits α and β
GFP-LysRS	All4019	58291	Glucose-6-phosphate 1-dehydrogenase;	
GFP-SerRS	All4337(TufA)	44680	Elongation Factor-Tu	
GFP-T1	All3402(ndk)	16473	Nucleoside-diphosphate kinase	
GFP-LeuRS	All4337(TufA)	44680	Elongation Factor-Tu	
	Alr1041(GlpX)	36606	D-fructose 1,6-bisphosphatase class 2/sedoheptulose 1,7-bisphosphatase	
	Alr0529(CpcA)	17326	C-phycocyanin alpha chain	
	Alr0021(ApcA1)	17215	Allophycocyanin subunit alpha 1	
GFP-GluRS	All4337(TufA)	44680	Elongation Factor-Tu	
	Alr2691	78787	hypothetical protein	
	Alr5249	80693	hypothetical protein (putative nucleic acids binding protein)	
	Alr2784	92862	hypothetical protein (putative metal dependent phosphohydrolase)	
	Alr2791	132044	hypothetical protein (WD-repeat protein)	
	All7286	34743	hypothetical protein	
	Alr3115	114780	hypothetical protein (putative metallopeptidase)	
	Alr1146	94725	hypothetical protein (GTPase domain)	
GFP- α PheRS	All0373	37983	putative serine/threonine protein phosphatase	
	Alr4958(PheT)	89031	phenylalanyl-tRNA synthetase subunit beta;	PheRS is a $(\alpha,\beta)_2$ heterotetramer
GFP-ArgRS	Alr7552	102324	ATP-dependent RNA helicase	
	Alr7147	58826	Transposase	
	All3333	47813	Nitrate binding protein	
	All0862	34459	LysR family transcriptional regulator	